DOCUMENT RESUME

ED 086 851 95 CE 000 885

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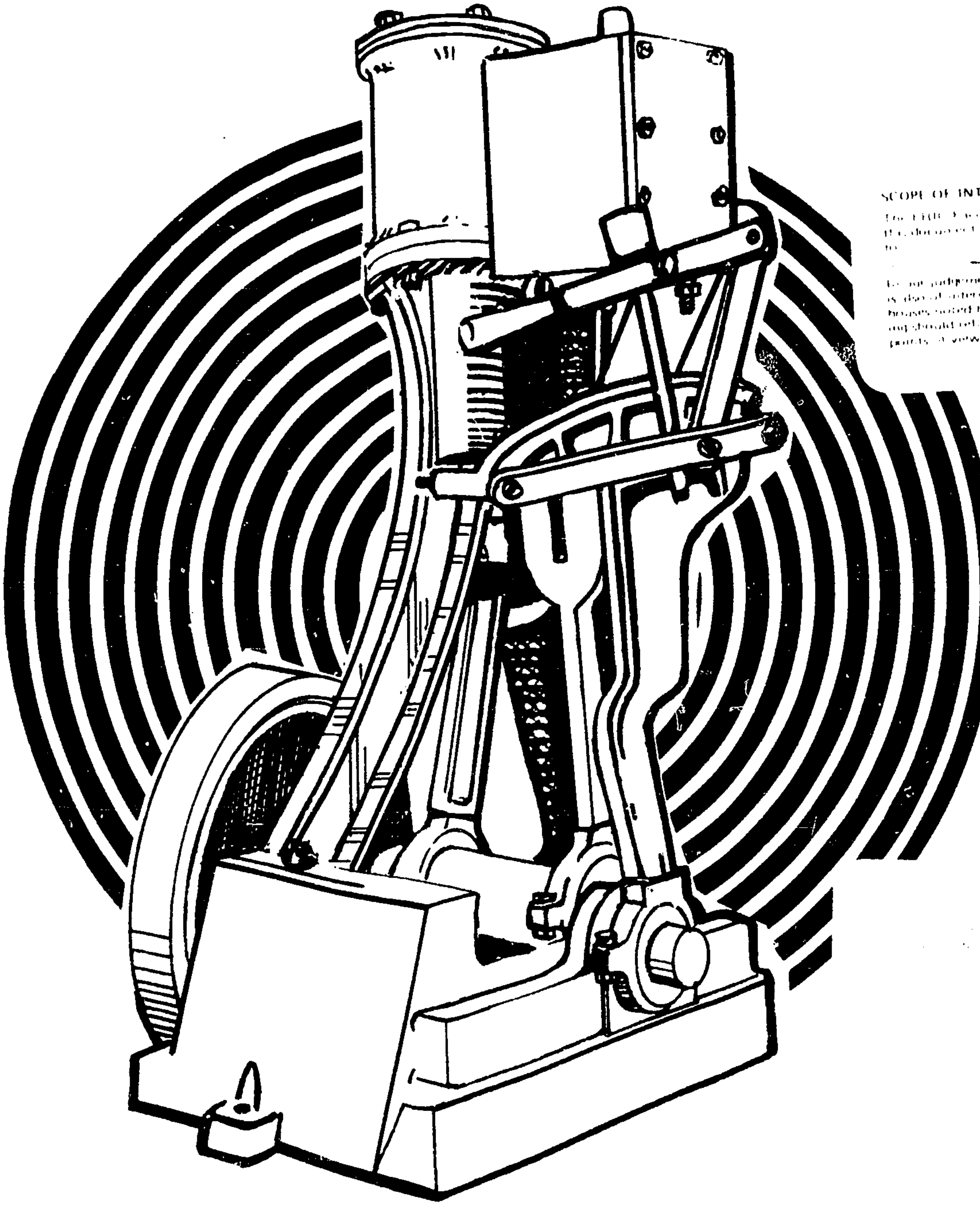
TITLE Marine & Small Engines; Glossary of Key Words. Vocational Reading Power Project, Title III, E.S.E.A.
INSTITUTION Oakland County Schools, Pontiac, Mich.
SPONS AGENCY Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; Michigan State Dept. of Education, Lansing.
REPORT NO MDE-0671
PUB DATE Nov 72
NOTE 57p.; For related documents, see CE 000 872-884, CE 000 886-891

EDRS PRICE MF-$0.65 HC-$3.29
DESCRIPTORS *Definitions; *Engines; *Glossaries; *Technical Education; Vocational Education
IDENTIFIERS Elementary Secondary Education Act Title III; ESEA Title III; *Marine Equipment

ABSTRACT

The glossary is one of twenty in various subject areas of vocational education designed to assist the student in vocabulary mastery for particular vocational education courses. They are part of the Vocational Reading Power Project, Title III, E.S.E.A. This glossary is for a course in marine and small engines. It is divided into two parts: one provides the student with two definitions for each term listed; the second part lists the same words with space for the student's definition. It is intended that upon completion of the course, mutually agreeable definitions for each term will be arrived at by the instructor and the students. These definitions will be made available to future students taking the course. (AG)

MARINE & SMALL ENGINES
Glossary of Key Words



Vocational Reading Power

E.S.E.A. Title III

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The preparation of this material was
supported by U.S.O.E. Grant: M.D.E. 0671

November, 1972

To The Student

This Glossary of Key Words was prepared to help you in your course. The words that follow were judged by your instructor to be the most important for you to understand.

Directions

The Glossary is divided into two parts. The first part lists the key words at the left side of the page. Across from the key words are two definitions for that word. The "A" definition is more difficult and specific. The "B" definition is easier and more general. During a learning activity, you are to use both definitions to help you understand. After the learning activity, you are to write your definition of the word as you understand it.

The second part just lists words. There is space for you to write your understanding of those words. Also, at the end of the booklet are blank lines. Here, you and your instructor will list and define the words which were left out.

At the end of the course, your definitions and the instructor's definitions will be joined together. These will be printed and given to the students who come after you have graduated. It is hoped that, with your help, the future students of vocational education will be greatly benefited.

a) PRIMARY
b) SECONDARY

TECHNICAL

ADDITIVE	a) As used with reference to automotive oils, a material added to the oil to give it certain properties. For example, a material added to engine oil to lessen its tendency to congeal or thicken at low temperatures. b) Improves engine oil.
APERTURE	a) A gap; passage; an opening; hole or port. b) Applied to any opening in an otherwise solid wall or surface.
BACKLASH	a) The clearance or "play" between two parts such as meshed gears. b) Movement between two gears.
CAMSHAFT	a) A shaft with cams machined at correct intervals to actuate the valve lifting mechanisms. b) A shaft with lobs to open and close the engine valves.
CONCENTRIC	a) Two or more circles having a common axis. b) Having a common center.
CONDENSER	a) Consisting of conducting plates or foils separated by thin layers of dielectric layers oppositely charged by a source of voltage and the electrical energy of the charged system stored in the polarized dielectric. b) Is a device for temporarily storing a surge of electrical current for later discharge. An older name for capacitor.
CRANKCASE	a) The lower part of an engine structure surrounding the crankshaft and many other parts that operate in the engine. b) The housing of a crankshaft.
CYLINDER	a) A round hole having some depth bored to receive a piston; also sometimes referred to as "bore" or "barrel." b) Like an open tin can, open at one end and closed at the other.

TECHNICAL

ADDITIVE

APERTURE

BACKLASH

CAMSHAFT

CONCENTRIC

CONDENSER

CRANKCASE

CYLINDER

a) PRIMARY
b) SECONDARY

ENGINE	a) A form of power-producing machine, such as an internal- or external-combustion engine. An example of an internal-combustion engine is the gas and diesel types, whereas a steam engine is of the external-combustion type. b) The term applies to the prime source of power generation.
GLAZE	a) As used to describe the surface of the cylinder, an extremely smooth or glossy surface such as a cylinder wall highly polished over a long period of time by the friction of the piston rings. b) A smooth shiny surface.
GUM	a) In automotive fuels, this refers to oxidized petroleum products which accumulate in the fuel system, carburetor or engine parts. b) From gas left in engine when stored for a long time.
HEEL	a) A bump which is eccentric on a shaft such as the lob on a camshaft or the teeth on a gear. b) The outside or larger half of the gear teeth.
KNURL	a) A small protuberance, excrescence, or knob. One of a series of small ridges or beads on a metal surface to aid in gripping. b) To indent or roughen a finished surface.
LAPPING	a) To work two surfaces together with or without abrasives until a very close fit is produced. b) To seat or fit valves.
MAGNETO	a) An electrical device which generates current when rotated by an outside source of power; may be used for the generation of either low tension or high tension current. b) Makes voltage to jump spark plug gap.
MANIFOLD	a) A pipe with multiple openings used to connect various cylinders to one inlet or outlet. b) A system of tubes and pipes.

ENGINE

GLAZE

GUM

HEEL

KNURL

LAPPING

MAGNETO

MANIFOLD

a) PRIMARY
b) SECONDARY

MISFIRING	a) Said of an internal-combustion engine when its explosive charge fails to ignite at the proper time. b) The spark plug doesn't start the burning in one or more cylinders with engine running.
MOTOR	a) A rotating machine that transforms electrical energy into mechanical energy. b) Actually this term should be used in connection with an electric motor and should not be used when referring to the engine.
MUFFLER	a) A chamber attached to the end of the exhaust pipe which allows the exhaust gases to expand and cool. It is usually fitted with baffles or porous plates and serves to subdue much of the noise created by the exhaust. b) Quiets exhaust noise.
PISTON	a) A cylindrical part of an engine fitted into the cylinder bore, and which transmits the force of explosion to the connecting rod and crank. b) A movable plug which fits snugly into the cylinder of an engine.
PORT	a) In engines, the openings in the cylinder block for valves, exhaust and inlet pipes, or water connections. In two-cycle engines the openings for inlet and exhaust purposes. b) Opening in a cylinder for intake and exhaust.
PORTING	a) As applied to racing engines, the enlarging, matching streamlining and polishing of the inside of the manifolds and valve ports to reduce the friction of the flow of gases. b) Making bigger and smoothing the inside of the manifolds of an engine to help gases flow better.
RACE	a) As used with reference to bearings, a finished inner and outer surface in which, or on which, balls or rollers operate. b) Hardened steel surfaces on which ball bearings or rollers operate.

MISFIRING

MOTOR

MUFFLER

PISTON

PORT

PORTING

RACE

a) PRIMARY
b) SECONDARY

RETARD

a) When used with reference to an ignition distributor, means to cause the spark to occur at a later time in the cycle of engine operations; opposite of spark advance.
b) The piston is closer to top dead center when spark plug fires.

SEAT

a) A surface, usually machined, upon which another part rests or seats.
b) The surface upon which a valve face rests.

STELLITE

a) An alloy of cobalt, chrome and tungsten which is often used for exhaust valve seat inserts. It has a high melting point, good corrosion resistance and unusual hardness when hot.
b) A super hard exhaust valve seat.

STROBOSCOPE

a) An instrument used to measure the speed of a rotating machine or examine its operation. It consists of a variable speed flashing light. It can be synchronized with the rotating machine. At synchronized speed, the rotating parts appear stationary.
b) A flashing light which makes a turning wheel look like it is standing still.

SUPERCHARGER

a) A blower or pump which forces air into the cylinders at higher than atmospheric pressure. In an engine the increased pressure forces more air into the cylinder, thus enabling more gasoline to be burned and more power produced.
b) A blower or air pump to force fuel-air mixture into cylinders, improving engine output.

TAPPET

a) A lever or projection moved by some other piece (as a cam) or intended to tap or touch something else to cause a particular motion (as in forms of internal-combustion engine valve gear).
b) An adjusting screw in the valve train of an engine to assure proper clearances between valve stem and cam.

RETARD

SEAT

STELLITE

STROBOSCOPE

SUPERCHARGER

TAPPET

a) PRIMARY
b) SECONDARY

TURBINE

a) A rotary engine actuated by the reaction or impulse, or both of a current of fluid (as water or steam) subject to pressure and usually made with a series of curved vanes on a central rotating spindle.
b) Same.

TURBINE

a) PRIMARY
b) SECONDARY

GENERAL TECHNICAL

ALIGNMENT	a) The proper positioning of parts in relation to each other. b) A forming in a line.
AMMETER	a) An instrument for measuring electric current in amperes. b) A meter used to measure current.
AMPERE	a) The current produced by an electromotive force of one volt acting through a resistance of one ohm. b) The usual unit of current strength.
ARMATURE	a) That part of an electrical machine which includes the main current-carrying winding. It is usually the core which rotates within the pole shoes which are surrounded by the field coils. b) The rotating core of soft metal upon which there is a wire winding.
BATTERY	a) Several voltaic cells connected in series or parallel. Usually contained in one case. b) Two or more electrical cells connected together.
BORE	a) The diameter of a hole, such as a cylinder. b) The inside space of the tube from one side to the other.
CARBON	a) A common non-metallic element which is an excellent conductor of electricity. It also forms in the combustion chambers of an engine during the burning of fuel and lubricating oil. b) Black build-up in the engine cylinder.
CARBURETOR	a) A device for automatically mixing fuel in the proper proportions with air to produce a combustible gas. b) Mixing place for air and fuel.

GENERAL TECHNICAL

ALIGNMENT

AMMETER

AMPERE

ARMATURE

BATTERY

BORE

CARBON

CARBURETOR

a) PRIMARY
b) SECONDARY

CHAMFER	a) A bevel or taper at the edge of a hole. b) A rounded corner.
CIRCUIT	a) The path of electrical current; fluids or gases. Examples for electricity: a wire; for fluids and gases: a pipe. b) An uncontrolled route.
CLEARANCE	a) An intervening space, as between machine parts for free play. b) The amount of space between parts.
COMPRESSION	a) The reduction in volume and increase of pressure of the air or combustible mixture in the cylinder prior to ignition, produced by the motion of the piston toward the cylinder head after intake. b) The squeezing of a gas, as a piston moves from bottom to top with all valves closed.
CONDUCTOR	a) A material alone or through which electricity will flow with slight resistance, silver, copper, and carbon are good conductors. b) A material that electricity will flow through.
CONTRACTION	a) A compression or reduction in dimension of an object. b) The tightening of an object.
CONVECTION	a) A transfer of heat by circulating heated air. b) The moving of heat by air.
CONVERTER	a) An object that transfers power. b) An object that carries power.
CORRODE	a) The slow oxidation and wasting away of metals. b) To eat away; such as rust.
COUNTERBORE	a) To drill a second larger hole using the same center as the original hole to a specified depth. b) To enlarge a hole to a given depth.
COUPLING	a) A connecting means for transferring movement from one part to the other, maybe mechanical, hydraulic or electrical. b) Joining together.

CHAMFER

CIRCUIT

CLEARANCE

COMPRESSION

CONDUCTOR

CONTRACTION

CONVECTION

CONVERTER

CORRODE

COUNTERBORE

COUPLING

a) PRIMARY
b) SECONDARY

CURRENT	a) The transferring of electrical energy in a conductor by means of electrons moving constantly and changing positions in a vibrating manner. b) The flow of electricity.
DEGREE	a) May be used to designate temperature readings or may be used to designate angularity, one degree being 1/360 part of a circle. b) One degree equal 1/360 of a circle.
DYNAMOMETER	a) An instrument for measuring mechanical force of an internal combustion engine. b) A machine for measuring force or power.
ECCENTRIC	a) One circle within another circle, wherein both circles do not have the same center. An example is a cam on a camshaft. b) Same.
ELECTRODE	a) The insulated center rod of a spark plug; a conductor used to establish electrical contact with a nonmetallic part of a circuit. b) Same.
ENERGY	a) The ability to produce action or effort. b) Being able to do work.
EXPANSION	a) The increase in volume in an internal combustion engine during the burning of the compressed mixture.) An increase in size.
FLOAT	a) A hollow tank which is lighter than the fluid in which it rests and which is ordinarily used to operate automatically. A valve controlling entrance of the fluid. b) To rest on top of a liquid.
GASKET	a) A flat piece of rubber, asbestos, metal or paper material placed between mating parts to prevent leakage. b) A material to stop leaking.

CURRENT

DEGREE

DYNAMOMETER

ECCENTRIC

ELECTRODE

ENERGY

EXPANSION

FLOAT

GASKET

a) PRIMARY
b) SECONDARY

GENERATOR	a) A machine by which mechanical energy is changed to electrical energy. b) A device which makes electricity.
GROWLER	a) An electrical device for testing electric motor or generator armatures for short circuits. b) A device for testing armatures.
HELICAL	a) Shaped like a coil or wire or a screen thread (used for restoring screw threads). b) Coil shaped.
HYDROMETER	a) An instrument for determining the state of charge in a battery by finding specific gravity of the electrolyte. b) A device used to check the charge of a battery.
OHM	a) The resistance of a conductor in which one volt produces a current of one ampere. b) The unit of measurement of resistance.
OSCILLATE	a) To swing or move to and fro between two points. b) To move back and forth.
OVERDRIVE	a) Any arrangement of gearing which produces more revolutions of the driven shaft than of the driving shaft. b) A special gear ratio, that lets the engine run slower, and saves gas and engine wear.
OXIDIZE	a) To combine oxygen with one or more other elements. Metal is oxidized when combined with oxygen and burned with cutting torch; soldering flux dissolves oxides that form due to air contacting metal surface. b) Cutting metal with a torch.
PINION	a) A small gear having the teeth formed in the hub. b) A small gear.

GENERATOR

GROWLER

HELICAL

HYDROMETER

OHM

OSCILLATE

OVERDRIVE

OXIDIZE

PINION

a) PRIMARY
b) SECONDARY

POLARITY	a) Refers to the positive or negative terminal of a battery or an electric circuit; also the North or South Pole of a magnet. b) North or South Pole or (+) or (-).
QUENCHING	a) A process of rapid cooling of heat metal by contact with liquid, gases or solids. b) Fast cooling of metal in water.
RATIO	a) The relation or proportion that one number bears to another. b) 2:1 or two to one.
REAM	a) To finish a hole accurately with a rotating fluted tool. b) Smoothing and sizing holes in metal.
RECTIFIER	a) A component or device used to convert alternating current into a pulsating direct current. b) Changing AC to DC.
SHIM	a) Small pieces of feeler stock used in adjusting the fit of bearings and machined parts. b) Thin sheets used as spacers between two parts.
SHUNT	a) In electrical apparatus, an alternate path for the current. Shunts are used to increase the range of a meter. b) To by-pass around.
SOLENOID	a) An iron core surrounded by a coil of wire which moves due to magnetic attraction when an electrical current is fed to the coil; often used to actuate mechanisms by electrical means. b) Electrical magnetic switch.
TACHOMETER	a) A device for measuring and indicating the rotative speed of an engine, wheel or shaft. b) Measures rotating speed.

POLARITY

QUENCHING

RATIO

REAM

RECTIFIER

SHIM

SHUNT

SOLENOID

TACHOMETER

a) PRIMRARY
b) SECONDARY

THERMOSTAT	a) A temperature-controlled valve in the cooling system of an engine to maintain a constant operating termperature. b) Control of heat.
TORQUE	a) Forces producing twisting or rotating motion. It is measured in pound-inch and pound-feet. b) A twisting or turning effort.
TURBULENCE	a) A disturbed or disordered, irregular motion of fluids or gases. b) Mixed up air or water.
VACUUM	a) A perfect vacuum has not been created as this would involve an absolute lack of pressure. The term is ordinarily used to describe a partial vacuum, that is, a pressure less than atmospheric pressure; in other words a suction. b) A space with nothing in it.
VALVE	a) A device used to open and close the port between the intake manifold and the combustion chamber or between the combustion chamber and the exhaust manifold. Valve operation is timed for proper engine operation. b) A device for opening and sealing a port.

THERMOSTAT

TORQUE

TURBULENCE

VACUUM

VALVE

CLUSTER WORDS

Active Material

Air Cleaner

Air-Fuel Ratio

Air-Gap

Air Horn

Air Lock

Allen Wrench

Alternating Current

Ampere-Hour Capacity

Anchor Aweigh

Anchor Buoy

Anchor Light

Anchor Watch

Anticlock-wise Rotation

Annular Ball Bearing

Anti-Freeze

Anti-Friction Bearing

Arc Welding

Atmospheric Pressure

Backfire

Back Lash

Back Pressure _____

_____

Back Wash _____

_____

Ball Bearing _____

_____

Beam Sea _____

_____

Bending Shackle _____

_____

Bilge Pump _____

_____

Bilge Water _____

_____

Bitter End _____

_____

Blow-By _____

_____

Boat Hook _____

_____

Boiling Point

Boring Bar

Bottled Gas

Bow Line

Brake Horsepower

Breaker Arm

Break-In

Brinnel Hardness

Broaching To

B.T.D.C. (Before Top Dead Center)

Buckled Plate

Bulk Head

By-Pass

Cable Length

Calorific Valve

Cam Angle

Cam Ground Piston

Can Buoy

Cape Chisel

Carbon Dioxide

Carbon Monoxide

Case-Harden

Casing Head Gasoline

Cast-Off

Cell Connector

Center Board

Center of Gravity

Center Line

Centrifugal Force

Chafing Gear

Chain Plates

Check-Valve

Chemical Compound

Chemical Element

Chilled Iron

Chromium Steel

Clerk Cycle

Clockwise Rotation

Cockpit

Coefficient of Friction

Compound Winding

Compression Ratio

Connecting Rod

Connecting Rod Bearing_____

_____

Contact Points_____

_____

Crankshaft_____

_____

Crankshaft Counterbalance_____

_____

Cut-Out_____

_____

Cylinder Block_____

_____

Cylinder Bore_____

_____

Cylinder Head_____

_____

Cylinder Liner_____

_____

Cylinder Sleeve_____

_____

Dagger Board_____

_____

Dash Pot

Dead Center

Dead Head

Denatured Alcohol

Dial Gauge

Die Casting

Diesel Engine

Direct Current

Dog Clutch

Dowel Pin

Down-Draft

Draw Filing

Drive-Fit

Drop Forging

Dry Batteries

Dry Rot

Dual-Fuel Engine

Dwell Period

Earth Connection

Ease Off

Ease The Rudder

Electro-Magnet

E.M.F. (Electromotive Force)

Engine Displacement

Ethyl Gasoline

Even Keel

Exhaust Gas Analyzer

Exhaust Pipe

Expansion Period

Fake Down

False Keel

Fan Tail

Feeler Gauge

Ferrous Metal _____

F-Head Engine _____

Field Coil _____

Flash Point _____

Flat Boat _____

Float Level _____

Floating Piston Pin _____

Fly Wheel _____

Foot-Pound _____

Foul Anchor _____

Four-Stroke Cycle _____

Free Board

Fuel Knock

Fuel Pump

Gear Case

Gear Ratio

Glase Breaker

Ground Tackle

Gudgeon Pin

Hand Lead

Hard Over

Hard Solder

Harmonic Balancer

Headway

Heat Exchanger

Heat Riser

Heat Treatment

Heave Ho

Heave The Lead

Heave To

Heaving Line

Helical Gear

Herring Bone Gear

High Tension

Horse Power

Hot Spot

Hunting Link

Hydrocarbon Engine

Ignition Distributor

Ignition Timing

In. (one inch)

Indicated Horsepower (IHP)

Induction Coil

Inland Rules of the Road

Intake Manifold _____

_____

Intake Valve _____

_____

Internal Combustion Engine _____

_____

Kilowatt Hour _____

_____

Kit Boat _____

_____

Landfall _____

_____

Lead Line _____

_____

Log Book _____

_____

Lower Unit _____

_____

Magnetic Field _____

_____

Mechanical Efficiency _____

_____

Mechanical Equivalent of Heat

Mercury Column

Mooring Buoy

Mushroom Anchor

Needle Bearing

Negative Pole

Nickel Steel

Non-Ferrous Metals

North Pole

Nose Heavy

Octane Number

Octane Selector

Off Shore Wind

Oil Pumping

Open Circuit

Otto Cycle

Outboard Motor

Overhead Valve

Overrun Coupling

Pay Out

Phillips Screw

Pilot Valve

Pinion Carrier_____

_____

Piston Clearance_____

_____

Piston Collapse_____

_____

Piston Deflector_____

_____

Piston Displacement_____

_____

Piston Head_____

_____

Piston Lands_____

_____

Piston Pin_____

_____

Piston Ring Expander_____

_____

Piston Ring Gap_____

_____

Piston Ring Groove_____

_____

Piston Rings

Piston Skirt

Piston Skirt Expander

Piston Stroke

Poppet Valve

Positive Pole

Potential Difference

Potential Drop

Pre-Heating

Pre-Ignition

Pre-Loading

Press-Fit

Primary Winding

Prony Brake

Push Rod

Radial Engine

Radio Compass

Radio Compass Station

Remote Control

Rocker Arm

Rockwell Hardness

Roller Bearing

Rotary Valve

Round Bottom

Rubber Indicator

Running-Fit

SAE (Society of Automotive Engineers)

SAE Thread

Safety Factor

Safety Relief Valve

Sand Blast

Say Bolt Test

Sea Buoy

Sealing Compound

Secondary Winding

Semi-Diesel

Series Winding

Short Circuit

Shrink-Fit

Shunt Winding

Shuttle Valve

Silicon Steel

Silver Soldering

Sleeve Valve

Sliding-Fit

Slip-In Bearing

Solid Injection

South Pole

Spark Advance

Spark Gap

Spark Ignition

Spark Knock

Spark Plug

Specific Gravity

Spiral Bevel Gear

Spline Joint

Spot Weld

Spur Gear

Spurt-Hole

Sq. Ft. (Square Feet)

Sq. In. (Square Inch)

Standard Thread

Static Electricity

Steel Casting

Stern Line

Stern Post

T.D.C. (Top Dead Center)

Thermal Efficiency

Thermo-Syphon

Third Brush

Timing Chain

Timing Gears

Torque Wrench

Trouble Shooting

Tune-Up

Two-Stroke Cycle Engine

Universal Joint

Up-Draft

Upper Cylinder Lubrication

Vacuum Gauge

Valve Clearance

Valve Face

Valve Grinding

Valve Head

Valve-In-Head Engine

Valve Key

Valve Lock

Valve Lifter

Valve Margin

Valve Overlap

Valve Seat

Valve Spring

Valve Stem

Valve Stem Guide

Vapor Lock

Vapor Pressure

Vapor Withdrawal

Vibration Damper_____

_____

Voltage Regulator_____

_____

Volumetric Efficiency_____

_____

Water Column_____

_____

Water Line_____

_____

White Metal_____

_____

Wiring Diagram_____

_____

Worm Gear_____

_____

Wrist Pin_____

_____

NEED TO KNOW WORDS

Abaft

Abeam

Abreast

Accelerate

Adrift

Afoul

Amidships

Aquaplane

Batter Down

Barnacle

Batters

Beam

Beam Sea

Bearing (Direction)

Belay

Bending Shackle

Berth

Bilge

Bilge Pump

Bilge Water

Binnacle

Blow By_____

_____

Bridge_____

_____